TECHNICAL REPORT TITLE PAGE

1. REPORT NO.

TR-475

2. REPORT DATE

August 2002

3. TITLE AND SUBTITLE

Synthesis of Best Practice for Increasing Protection and Visibility of Highway Maintenance Vehicles

4. TYPE OF REPORT & PERIOD COVERED

Final Report, March 2002 to August 2002

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7. ACKNOWLEDGMENT OF COOPERATING ORGANIZATIONS/INDIVIDUALS

8. ABSTRACT

The purpose of this research project is to study current practices in enhancing visibility and protection of highway maintenance vehicles involved in moving operations such as snow removal and shoulder operations, crack sealing, and pothole patching. The results will enable the maintenance staff to adequately assess the applicability and impact of each strategy to their use and budget.

The report's literature review chapter examines the use of maintenance vehicle warning lights, retroreflective tapes, shadow vehicles and truck-mounted attenuators, and advanced vehicle control systems, as well as other practices to improve visibility for both snowplow operators and vehicles. The chapter concludes that the *Manual on Uniform Traffic Control Devices* does not specify what color or kind of warning lights to use. Thus, a wide variety of lights are being used on maintenance vehicles. The study of the relevant literatures also suggests that there are no clear guidelines for moving work zones at this time.

Two types of surveys were conducted to determine current practices to improve visibility and safety in moving work zones across the country and in the state of Iowa. In the first survey of state departments of transportation, most indicated using amber warning lights on their maintenance vehicles. Almost all the responding states indicated using some form of reflective material on their vehicles to make them more visible. Most participating states indicated that the color of their vehicles is orange. Most states indicated using more warning lights on snow removal vehicles than their other maintenance vehicles. All responding state agencies indicated using shadow vehicles and/or truck-mounted attenuators during their moving operations. In the second survey of Iowa counties, most indicated using very similar traffic control and warning devices during their granular road maintenance and snow removal operations. Mounting warning signs and rotating or strobe lights on the rear of maintenance vehicles is common for Iowa counties. The most common warning devices used during the counties' snow removal operations are reflective tapes, warning flags, strobe lights, and auxiliary headlamps.

9. KEY WORDS

Maintenance vehicle protection
Vehicle visibility
Work zone safety

10. NO. OF PAGES

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